

Macrozamia johnsonii, a new species of *Macrozamia* section *Macrozamia* (Zamiaceae) from northern New South Wales

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Abstract

Jones, D.L.¹, and Hill, K.D.² (¹ Australian National Botanic Gardens, GPO Box 1777, Canberra, ACT, Australia 2601; ² Royal Botanic Gardens, Sydney, NSW, Australia 2000) 1992. *Macrozamia johnsonii*, a new species of *Macrozamia* section *Macrozamia* (Zamiaceae) from northern New South Wales. *Telopea* 5(1): 31–34. *Macrozamia johnsonii*, a previously undescribed species confused with *M. moorei*, is described and figured below.

Macrozamia johnsonii D. Jones & K. Hill, sp. nov.

M. moorei F. Muell. affinis sed habitu brevior, frondibus viridibus, foliis amphistomaticis et plantula dissimili (petiolo tereti, rhachidi recta vix tortili ad apicem non curvata, et pinnis late patentibus falcatis nitenti-viridibus tenuibus, hypostomaticis, cum basi callosa alba) differt.

TYPE: NEW SOUTH WALES: c. 12 km east of Dalmorton on slopes above the Nymboida River, *D. Jones* 6748 and *C. H. Broers*, 18 October 1990 (holo CBG; iso BRI, CBG, NSW)

Trunk broadly cylindrical 0.3–1.5 m tall, to 80 cm diameter. Fronds very numerous, bright green, to 120 in the crown, at first erect, later spreading obliquely, then drooping, 1.5–3 m long on mature plants, flat in cross-section, straight to arching in profile; spine-free petiole (excluding the woolly, swollen base) 2–8 cm long; rhachis not twisted or with a very gentle half spiral, more or less flattened, usually 25–28 mm broad at the lowest pinnae, shallowly convex above (sometimes with 2 or 3 broad furrows in the proximal region) with 2 narrow lateral grooves decurrent from the bases of the pinnae, convex beneath. Pinnae 150–250, widely spreading, inserted on the rhachis at about 40 degrees, moderately crowded (0.5–2 cm apart), moderately rigid, pungent-tipped, entire, straight, linear, 40 or more of the lower ones progressively reduced, rigid and spine-like; median leaflets linear, 20–40 cm × 5–11 mm, with 7–12 scarcely raised nerves beneath, amphistomatic, gradually tapered to the pungent apex, contracted to the whitish, anteriorly callous, more or less rugose base. Cones pedunculate, the females 1–6, the males 10–50 per plant, axillary amongst the lower fronds, the base of the peduncle surrounded by several, brownish, spine-like, angular, subulate, ligulate cataphylls 8–15 cm long; reduced, decurrent cataphylls present also on the peduncle. Male cones cylindrical, semi-erect to spreading, straight or more usually curved, 25–40 cm long, 8–10 cm diameter; sporophylls cuneate, 1.8–3 cm × 1.2–1.8 cm, with an apical, erect, spine-like appendage 0.2–2 cm long, the longest ones on the distal sporophylls; peduncle 10–12.5 cm long, 2–3 cm diameter. Female cones cylindrical to barrel-shaped, green with pink areas on the sporophylls, 50–80 cm long, 10–20 cm diameter, usually spreading, drooping with age; sporophylls 5–7 cm long, broadly cuneate, expanded towards the apex where glaucous (3–6 cm across), with an apical, erect, spine-like appendage 3–7 cm long, the longest ones on the distal sporophylls; peduncle 15–22 cm long, 3–4 cm diameter. Seeds 4–6 cm long, 2.5–3 cm thick, oblong, sarcotesta bright red.

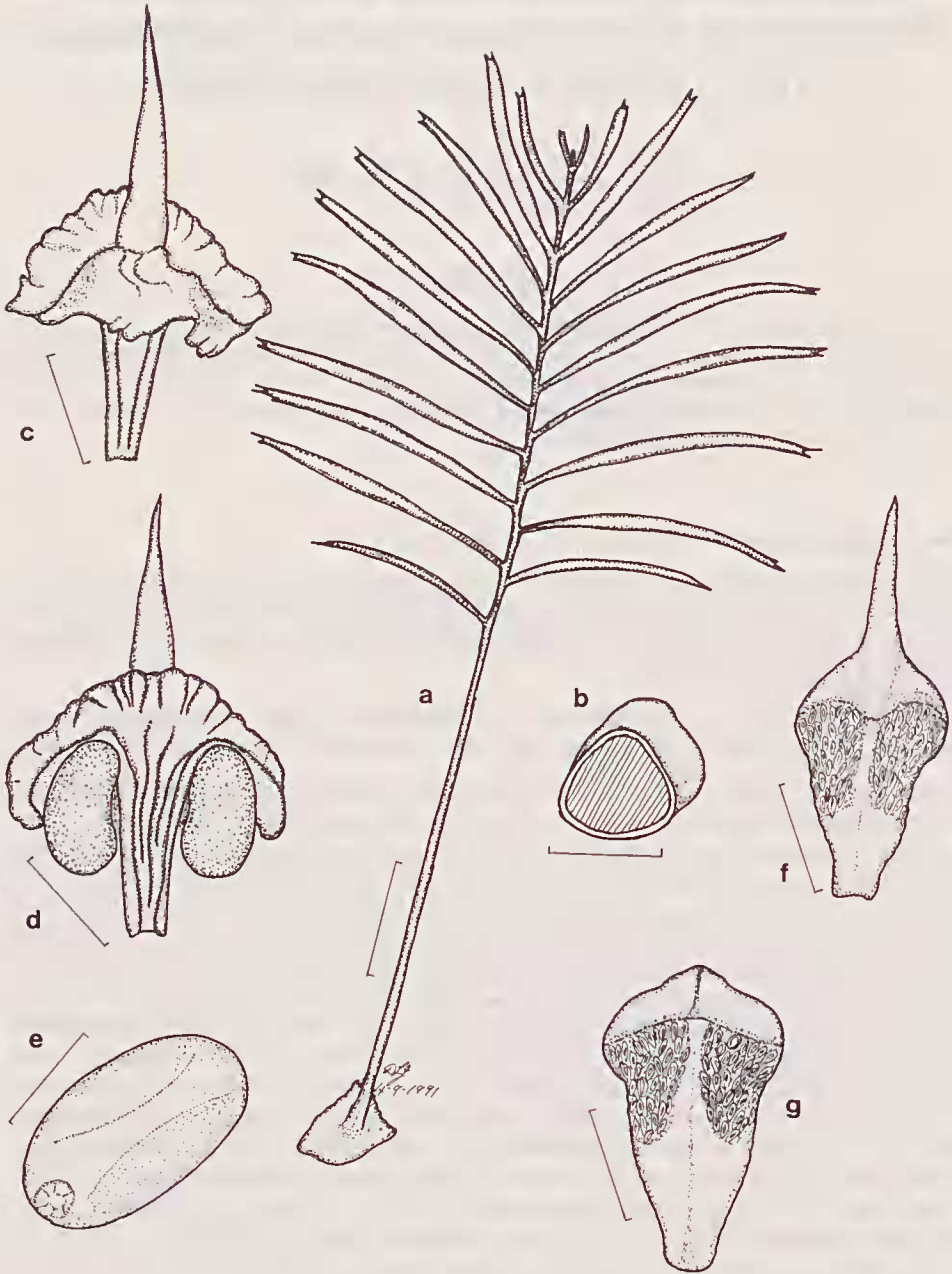


Figure 1. *Macrozamia johnsonii*. a, seedling leaf; b, cross-section through rhachis; c, female sporophyll from above; d, female sporophyll from below; e, seed; f, male sporophyll (from below) from apical portion of cone; g, male sporophyll (from below) from basal portion of cone (all from Jones 6748). Scale bar: a, c, d, e = 2 cm; f, g = 1 cm; b = 2 mm.

DISTRIBUTION AND HABITAT: Occurring on the North Coast Region of New South Wales where it grows on sheltered ridges and steep southerly and easterly slopes in wet and dry sclerophyll forest. The soils are skeletal clay loams with shale fragments over shale.

SELECTED SPECIMENS: NEW SOUTH WALES: North Coast: 3 miles (c. 5 km) E of Dalmorton, *Morris*, Jan 1960 (NSW 49023 – juvenile, NSW 49024 – adult); Marara Creek, Dalmorton, *Floyd* AGF 1215 (adult), AGF 1216 (juvenile), 21 Feb 1979 (NSW); Tower Hill Creek, Dalmorton, *Constable*, 29 Oct 1952 (NSW); 3 miles (c. 5 km) E of Dalmorton, *Johnson & Constable*, 7 June 1957 (NSW 43070 – juvenile, previously determined as *M. lucida*, NSW 42180 – adult).

NOTES: *M. johusonii* is closely related to *M. moorei* and has been included with that taxon (*Johnson* 1961). *M. johusonii* never develops the tall, massive trunks of *M. moorei* and has green rather than grey-green fronds. In addition, the seedlings of each are quite distinct. Those of *M. johusonii* have a nearly rounded petiole, a straight, hardly twisted rachis not recurved at the tip and widely spreading falcate pinnae that are shiny green, hypostomatic, thin-textured, with a prominent white callous base obvious from an early age. Development of shiny, hypostomatic pinnae continues on juvenile plants for several years, then an abrupt change to the adult form occurs, in which the pinnae are amphistomatic. Seedlings of *M. moorei* have a petiole flat on the adaxial surface, a prominently twisted rachis recurved at the tip and erect, straight pinnae which are dull, amphistomatic, dark blue-green, with a callous base which is prominent only on later fronds. Seedling pinnae resemble adult pinnae from a very early stage and are always amphistomatic. *M. johusonii* and *M. moorei* are separated geographically by a distance of about 800 km. *M. johusonii* is locally common in the Dalmorton area and grows in large colonies that are regenerating freely.

Macrozamia lucida has been reported from the Dalmorton area of New South Wales on the basis of sterile specimens (*Johnson* 1961). Later extensive searches of the area by various collectors have failed to locate fertile material (*Johnson* pers. comm.; *Floyd*, in litt. herb. NSW). Collections from the same plant (*Floyd* AGF 1215, AGF 1216) show that leaves of the juvenile stage of *M. johusonii* develop a long spine-free petiole and glossy hypostomatic pinnae with more or less prominent veins on the undersurface. In these respects, they resemble adult leaves of *M. lucida*, although the latter have more prominent white basal callous regions on the pinnae. The two *Floyd* collections include one leaf with the long spine-free petiole and hypostomatic pinnae, and one with spinescent lower pinnae and amphistomatic pinnae, both from the same plant. All records of *M. lucida* from New South Wales are now regarded as resulting from confusion with juvenile stages of *M. johusonii*.

CONSERVATION STATUS: 2R (*Briggs and Leigh* 1988). *M. johusonii* occurs exclusively in state forests and is not included in any reserve. Although not specifically protected, large populations occur in areas unlikely to be under immediate threat, and the species is not considered to be threatened in the short term.

ETYMOLOGY: The name honours Lawrence A. S. *Johnson*, in recognition of his pioneering studies in the Cycadaceae and Zamiaceae.

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References

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